11. RAIL IMPROVEMENT PROJECTS

11.1. FRA Requirements

This Chapter of the Virginia Statewide Rail Plan (VSRP) presents information related to improvements to Virginia's entire rail system as required by 49 CFR § 266.15 (c)(6)(iii), 49 CFR § 266.15 (c)(7), 49 CFR § 266.15 (c)(8), 49 CFR § 266.15 (c)(9) and 49 CFR § 266.15 (c)(9)i.

The requirement of 49 CFR § 266.15 (c)(6)(iii) is met by the narratives accompanying each project description.

The data required by 49 CFR § 266.15 (c)(7) is presented in section 11.2.

The data required by 49 CFR § 266.15 (c)(8) is presented in section 11.2.and the narratives accompanying each project description.

The requirement of 49 CFR § 266.15 (c)(9) is fulfilled by the narratives accompanying each project description.

The requirement of 49 CFR § 266.15 (c)(9)(i) is fulfilled by the narratives accompanying each project description and the Rail Resource Allocation Plan.

11.2. Methodology

Based on existing conditions and anticipated future growth demands, this section presents an assessment of the estimated rail needs for the Commonwealth through 2035 and are unrestricted by costs, funding availability, responsibility, and priority – these issues will be included in the following chapter which contains the 2008 Statewide Rail Resource Allocation Plan. The 2008 Statewide Rail Resource Allocation Plan was written prior to the ARRA funding legislation and reflects only Commonwealth of Virginia funding of projects coupled with local match funds. This section contains investments needs that include data supplied directly by the railroads. It also includes needs identified by the FRA and Commonwealth through previous and ongoing major investment studies that include:

- Potential Improvements to the Washington-Richmond Railroad Corridor Report to Congress – Amtrak in conjunction with FRA (1999)
- I-95 Corridor Coalition: Mid-Atlantic Rail Operations Study - MAROPS Phase I (2002)
- Southeast High Speed Rail Corridor – Tier I Environmental Impact Statement (2002)
- The Northeast – Southwest – Midwest Corridor Marketing Study (2003)
- Technical Monograph: Transportation Planning for the Richmond-Charlotte Railroad Cooridor – FRA (2004)
- Governor's Commission on Rail Enhancement for the 21st Century Report (2004)
- Washington, DC to Richmond Third Track Feasibility Study (2006)

- TransDominion Express (TDX) Update Report (2007)
- I-81 Corridor Improvement Study Tier I Final Environmental Impact Statement (2007)
- Roanoke Region Intermodal Facility Summary Report (2008)
- I-95 Corridor Coalition: Mid-Atlantic Rail Operations Study - MAROPS Phase II (Ongoing)
- Opportunities for Truck to Rail Diversion in Virginia's I-81 Corridor (Ongoing)
- Southeast High Speed Rail Corridor Tier II EIS (Ongoing)
- Richmond/Hampton Roads Passenger Rail Tier I Environmental Impact Statement (Ongoing)
- Richmond Area Rail Improvement Project Environmental Documentation (Ongoing)
- Shortline Railroad Improvement Program Technical Memorandum (2008)

Summaries of the above reports and studies are contained in Appendix B. Copies of the complete reports can be found on DRPT's website www.drpt.virginia.gov . Also reviewed were strategic multimodal transportation plans developed by the Virginia Port Authority; Amtrak; the Virginia Railway Express; the NS Heartland Corridor Double-Stack Initiative; the CSX National Gateway Initiative; and DRPT's Public Transportation and Transportation Demand Management (TDM) plans.

In the discussion below, project needs are based on current conditions and anticipated trends. Estimated needs are presented in four categories:

- Passenger Rail Corridor Initiatives
- Class I Railroad Improvements
- Shortline Railroad Improvements
- Rail Improvements to Virginia Ports

Because of their significant impact on rail traffic and potential economic development in connecting Virginia to global markets, the ports were considered a separate category in determining rail improvement needs.

All improvements address one or more of the following:

- Reducing passenger car and truck freight traffic to alleviate highway congestion, reduce energy demands and reduce pollutants
- Increasing freight capacity throughout the Commonwealth to support greater demand for freight rail shipping, growth in the coal industry and improved capacity at Virginia's ports
- Improving passenger rail by enhancing system performance and adding capacity

The freight railroads are private, for-profit businesses and, in accordance with federal policies concerning competitiveness, do not release certain information. The Statewide Rail Plan provides general information about Class I freight rail improvement projects. Project cost estimates for Norfolk Southern and CSX have been provided by the respective railroads and are being evaluated by the Commonwealth.

In the case of shortline railroads, DRPT assisted in the development of cost estimates for future capital needs and projects. For passenger rail projects, DRPT and North Carolina are conducting separate but coordinated detailed planning and engineering analysis that, while not yet complete, provides the best estimate of costs to date.

Due to market uncertainties and significant recent cost increases associated with railroad construction, these are conservative cost estimates. It is the Commonwealth's standard practice to execute project agreements with the railroads that allocate 100 percent of the risk of cost escalation to the private sector in delivering capital projects. Any rail project that receives public funding from the Commonwealth must represent the best value for the taxpayer's dollar and procurement of design and construction services must be in accordance with Commonwealth policies. This requires the bidding of construction contracts to insure competitiveness and opportunities for small, woman and minority owned businesses (SWaM) to participate.

All potential rail improvement projects have undergone an internal environmental review by DRPT to identify project readiness and potential environmental issues to be address during project planning and analysis by the railroads or rail operators. The environmental review utilized the Department of Conservation and Recreation (DCR) "Land Conservation Explorer" on their website at www.vaconservedlands.org to evaluate the presence of various federal, state, local, and private environmental easements or areas that might be affected by any rail development that occurred outside of existing rail rights-of-way.

The cost estimates are in 2010 dollars unless otherwise noted. Cost estimates include capital costs only. No operating or equipment costs are included; they will be identified in the Statewide Rail Resource Allocation Plan.

In the information that follows, project needs are presented in two ways: 1) as part of major Commonwealth transportation that serves corridor initiatives for multimodal networks in accordance with Virginia's long range transportation plan; and 2) as an industry project associated with the Class I railroads (Norfolk Southern and CSX), the 9 shortline railroads, passenger rail operators (Amtrak and VRE) and the Ports of Hampton Roads.

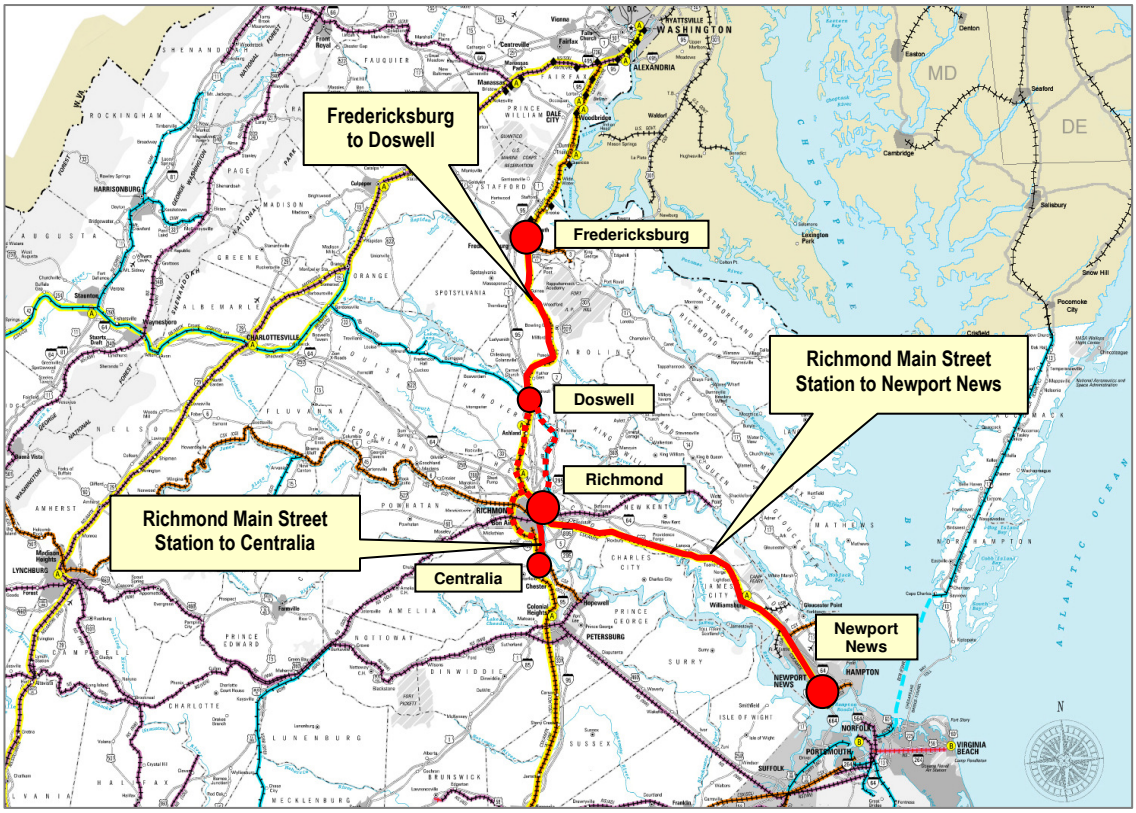
Corridor improvements are those projects within identified transportation corridors that will increase the freight shipments to and from ports, improve commuter and intercity rail within regions of the Commonwealth and other freight improvement projects identified by Class I and shortline railroads in Virginia. The total cost for all rail transportation corridor improvements is approximately $5 billion using the upper end cost estimates for projects that are presented within a range. This total cost represents an average annual expense of approximately $185 million for the 27-year period beginning 2009 through 2035. All costs are stated in 2010 dollars escalation to year of expenditure (YOE) is included.

The total cost estimate includes long term rail needs that contain significant public benefits associated with improving passenger rail, reducing highway congestion and fostering economic development. Some needs could be met within current state funding streams consistent with the development of the Six Year Improvement Plan. Those projects selected represent the short-term needs identified in the rail resource allocation plan in the next chapter, with all or some portion of the remaining projects to be programmed into the 2035 long range plan based on public benefits and available funding.

11.3. Passenger Rail Corridor Initiatives

11.3.1. I-95/I-64 Intercity Passenger Rail Project (I-64, I-95, I-295 and Route 460)

The I-95/I-64 Intercity Passenger Rail Project includes rail service between Washington, DC, Richmond and Newport News. Third track capacity improvements north of Fredericksburg have been identified as part of the improvements for VRE between Fredericksburg and Washington, DC The project plan for the Urban Crescent Express assumes that a passenger rail station will be added in Caroline County as part of a transit-oriented development project.



With the vast majority of the state's population and employment along this corridor, I-95/I-64 Intercity Passenger Rail Project presents the best ridership opportunity in the Commonwealth. Total Amtrak ridership in the corridor in 2008 totaled 516,000.

Figure 11 – 1is the location map for the project.

Figure 11 - 1 I-95/I-64 Intercity Passenger Rail Project

11.3.1.1. Key Facts

- The I-95/I-64 transportation corridor connects major Virginia population and employment centers and contributes significantly to the Commonwealth's economy.

- This project will provide highway congestion relief and increase transportation choices through freight and passenger rail improvements between Washington, DC, Richmond and Newport News.
- With the vast majority of the state's population and employment centers along this corridor, the I-95/I-64 Intercity Passenger Rail Project presents the best ridership opportunity for increasing rail ridership in the Commonwealth.
- Annual Amtrak ridership in this corridor totaled 516,000 in 2008. This project could increase ridership by a minimum of more than 80 percent (980,700) up to more than 110 percent (1,130,400) in seven years (2015). By 2030, ridership could increase to between 1,570,100 and 1,817,600 passengers per year.
- The I-95/I-64 Intercity Passenger Rail Project will:
  - Enhance passenger and freight rail operations with more frequent service, capacity and travel time savings between Hampton Roads, Richmond and Washington, DC, including service to the Northeast Corridor.
  - Construct or expand passenger rail stations to provide multimodal connections and encourage transit-oriented development.
  - Improve passenger platforms at Richmond's Main Street Station to accommodate long distance Amtrak trains and increase customer access.
  - Provide passenger rail improvements in anticipation of high speed rail development in the Commonwealth.

11.3.1.2. Project Management

- DRPT will complete federal environmental documentation to determine the service route between Main Street Station in Richmond and Doswell for potential high-speed rail service.
- The Commonwealth, Amtrak, CSX and VRE will coordinate all project-related rail improvements and operations.
- The project will be managed through a public-private partnership between the Commonwealth, CSX, Amtrak and federal partners.

11.3.1.3. Project Phasing Without Federal Funding

- Phase I- (Completed by 2015) - Capacity/Station Improvements
  - $215.5 M ($222.3 M YOE) total project cost ($152.7 M state)*
  - One new daily round trip train from Richmond to Washington, DC as a demonstration project for three years beginning in FY2010, station improvements at Staples Mill Station and the rehabilitation of one train set.
  - Design and construction of capacity improvements from Washington, DC to Richmond and Newport News, including third main track sections and enhancements to increase on-time performance.

  - Completion of environmental study to select the route for future high speed passenger trains between Richmond and Doswell, as required in the federal planning process.

- Phase II - Regional Trains to Newport News
  - $406.8 M ($440.8 M YOE) total project cost (unfunded)*
  - Complete capacity improvements from Phase I and extend three regional trains from Staples Mill Station to Newport News for a total of five daily trains to serve Newport News, Richmond and Washington, DC. Enhance passenger rail stations.

- Phase III - Additional Trains/Rolling Stock
  - $91 M ($118.7 M YOE) total project cost (unfunded)*
  - Four additional trains with half-hour service between Newport News, Richmond and Washington, DC for a total of nine daily trains.

- Phase IV - Reroute Long Distance Trains
  - $231.3 M ($310.9 M YOE) total project cost (unfunded)*
  - Capacity improvements between Centralia and Main Street Station to allow long distance trains to serve Main Street Station. New service to Caroline County and other station improvements.

- Phase V - New Bridge/Track Capacity
  - $2,636.1 M ($3,545.1 M YOE) total project cost (unfunded)
  - Bridge capacity improvements between Newport News and Washington, DC, including a new Potomac River bridge.
  - Connect third track sections in the I-95 corridor and second main line sections between Richmond and Newport News.

11.3.1.4. Project Cost Without Federal Funding:

The estimated total project cost is $3,580.7 million *($2010)*

- Proposed FY2009 – FY2015 Improvement Plan– $215.5 M total project cost for Phase I to be completed from FY09-FY15 ($152.7 M state).
- Phases II, III, IV and V are unfunded needs identified in the Statewide Rail Resource Allocation Plan, which are proposed for funding in future years.
- Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources.
- Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners. All capital costs are based on the most recently available estimates, expressed in 2010 dollars.

- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

**All marked items require operating funds in addition to the capital costs noted in this document.*

11.3.1.5. Additional Improvements with Federal Funding

DRPT submitted a Decision brief on April 6, 2009 and the FRA concurs that the Buckingham Branch alternative may be dismissed from further consideration for passenger rail service between Richmond and Doswell. This was a first step toward a Tier 2 evaluation for the Southeast High Speed Rail (SEHSR) corridor. The I-95 Richmond to Washington, D.C. improvements represents the northern end of the SEHSR Corridor. Work completed for this project will become part of the SEHSR corridor discussed in section 11.3.3.

On May 19, 2009 the FRA signed a cooperative agreement with DRPT that includes a $2 million grant for the design of capacity and routing improvements in Richmond Virginia. This grant includes design of track and interlocking improvements between Main Street Station and South Acca Yard. This project will advance the development of the corridor to accommodate the eventual relocation of all passenger service through Richmond Main Street Station. In addition, DRPT received an ARRA funded grant on August 19, 2009 from FHWA for continuing the Acca Yard/Richmond Area Improvements design and environmental documentation. DRPT has requested that FHWA transfer this grant to FRA for administration so that both grants can be coordinated with other planning and design efforts underway in this corridor.

The American Recovery and Reinvestment Act (ARRA) of 2009 provided funding to the FRA for High-Speed Intercity Passenger Rail (HSIPR) projects. The Commonwealth of Virginia submitted on August 24, 2009 a track 1a application for final design and construction of 11 miles of third track for Arkendale to Powell's Creek. The Commonwealth also submitted on October 2, 2009 a track 2 round 1 application for 19 individual projects that make up the Richmond to Washington DC I-95 Corridor phase I improvements for SEHSR. The following list is the 19 projects in priority order including YOE costs;

- Crossroads to Hamilton Third Track Construction CFP 53 to CFP 56 – $19.1 million
- Construction of Alexandria Station Platform / Metro Connection CFP 105 – 16.5 million
- Construction of Fourth Main Line Track AF to RO CFP 104 to CFP 110 - $17.6 million
- I-95 Arkendale Powell's Creek Third Track CFP 72 to CFP 83 - $75.2 million
- Richmond Area/Acca Yard Improvements Phase I CA 76.2 to CA 84.5, MP 87 to MP 90, and SRN 1 to SRN 4 - $256.9 million
- Richmond Area/Acca Yard Improvements Phase II CFP 1 to CFP 7, S0 to S 11 - $375.5 million

- Platform Infrastructure Improvements North of Fredericksburg (Various) - $72.7 million
- Fourth Main Line Upgrade/Construction Fredericksburg to Mine Road in Spotsylvania County CFP 54 to CFP 59 - $12.4 million
- North Doswell to Colemans Mill Third Main Line Track Construction CFP 23 to CFP 30 - $60.1 million
- Lorton to Franconia Third Track Construction CFP 93 to CFP - $58.7 million
- Powells Creek to Lorton Third Track Construction CFP 83 to CFP - $193.6 million
- Arkendale to Dahlgren & Aquia Bridge Third Track Construction CFP 61 to CFP 72 - $163.6 million
- Parham Station to Elmont Third Track Construction CFP 7 to CFP 11 - $56.8 million
- Guinea to Milford Third Track Construction CFP 30 to CFP 48 - $131.8 million
- SEHSR Track and Curve Geometry Realignment to Accommodate Maximum Achievable Speed Segments of 90 Miles Per Hour - 104 Miles - $58.0 million
- High Speed Interlockings Richmond to Washington, D.C. - $54.7 million
- Signal Improvements for 90 Miles per Hour Segments of Train Operations Richmond to Washington, D.C. - $129.7 million
- Washington, D.C. to AF Interlocking/Alexandria – Study - $1.5 million
- Dahlgren to Fredericksburg 3rd Track Feasibility Study – $0.5 million

Projects are scheduled for completion by the end of 2017 and the FRA decision is expected in early 2010 for funding levels. Project list may need to be adjusted depending upon actual funding levels awarded.

11.3.1.6. Annual Benefits

- Removes over 1.15 million cars from Virginia highways
- Saves over 6.3 million gallons of fuel
- Saves 51 thousand tons of CO2 emissions

11.3.1.7. Partnership Opportunities

The I-95/I-64 Intercity Passenger Rail Project will represent a public private partnership between the Commonwealth, CSX, Amtrak, local/regional bodies and the private sector as it relates to station development.

11.3.2. Commuter Rail Improvement Project

The VRE Manassas Line extends from Washington DC west to Alexandria and Manassas, roughly south of the I-66 and Route 29 Corridors. This commuter line primarily serves Prince William and Fairfax Counties, although commuters from counties further west also use these commuter lines for their daily commute to the Washington DC region.

VRE is the primary user of two Norfolk Southern mainline tracks between Alexandria and Manassas. Upgrades to this portion of track will support Class 4 rail track standards for continued passenger train use of the system. VRE commuter and Amtrak intercity trains both use this line section. Although this line section is also utilized for freight movements, the high standard of track conditions is necessary for continued efficient and dependable passenger train operations. Without these improvements, these tracks could degrade to Class 3, thus lowering the track speeds, impacting passenger train schedules and diminishing rider confidence in train reliability. Proposed projects along this line section include construction improvement costs, such as infrastructure rehabilitation, to allow for continued commuter and intercity train speeds at or above their current levels. Ultimately, improvements to this section of the rail system will also benefit system expansions in the I-81 and Route 29 corridors. Figure 11-2 depicts the route location. In a related project, the Alexandria to Lynchburg improvement project will provide switch improvements along this line section. Norfolk Southern has included the project costs for the Lynchburg passenger rail service in its Crescent Corridor project.

Figure 11 – 2 is the location map for the Alexandria to Manassas portion of the project.

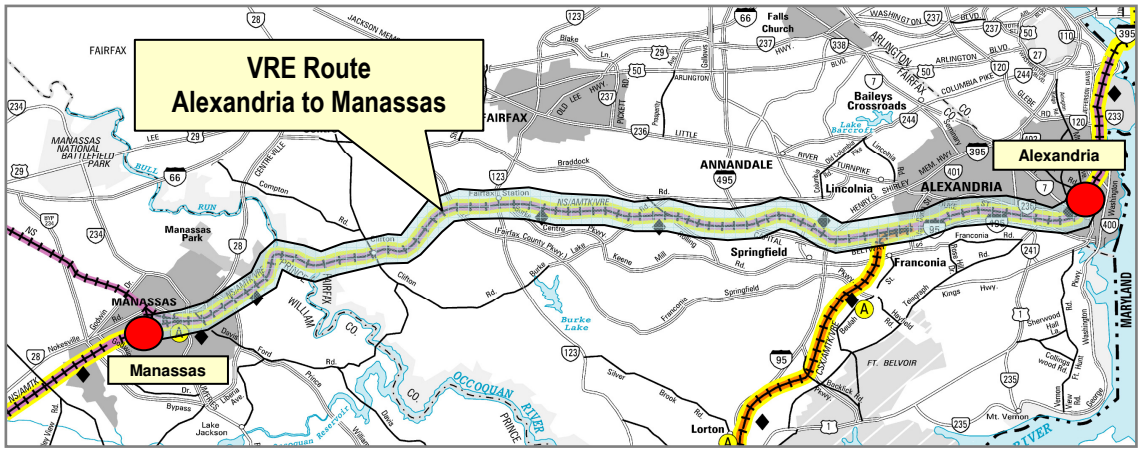


Figure 11 - 2 Commuter Rail Improvement Project – Manassas to Alexandria

Population growth and commuter patterns continue to shift westward along the I-66 corridor. DRPT has provided Rail Enhancement funding to conduct a major investment study to determine the viability and potential locations of future passenger rail stations along the Norfolk Southern line section between the City of Manassas and Gainesville/ Haymarket in Prince William County. Following the completion of this study, VRE and Norfolk Southern must work collaboratively to identify the infrastructure capacity improvements necessary for the expansion of VRE service and the successful coexistence of freight and passenger rail operations, currently and in the future. Unlike the other Norfolk Southern line sections utilized by VRE today, this line section is currently used exclusively for freight train service. It

is a vital intermodal link between the Port of Hampton Roads, the Virginia Inland Port and the Crescent Corridor. This project will extend VRE commuter rail service over the 11 .3 mile line section between the City of Manassas and Gainesville/Haymarket along the I-66 rail corridor, including the construction of three stations. Extensive upgrades to the existing line will make tracks suitable for passenger rail operations.

Figure 11 – 3 is the location map for the Gainesville to Haymarket portion of the project.

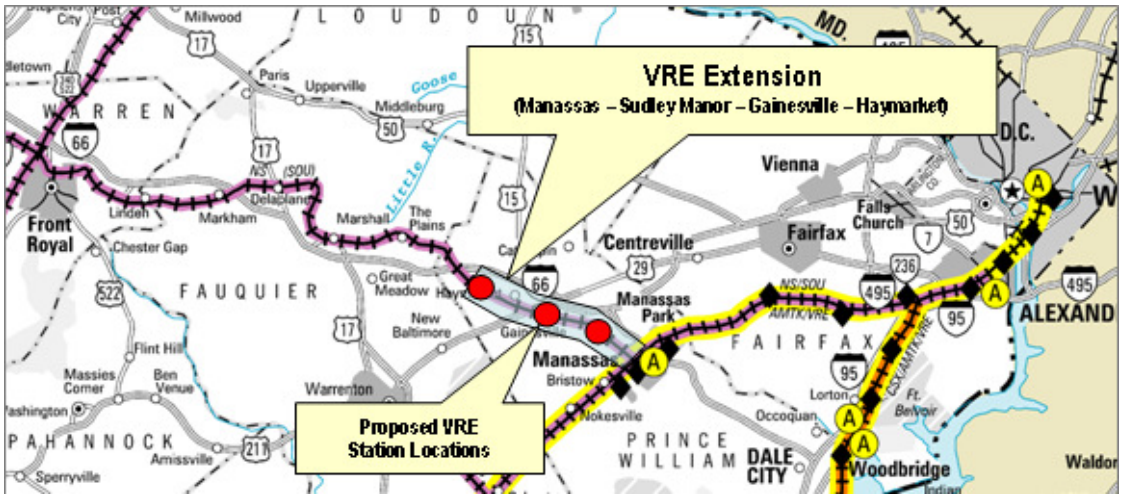


Figure 11 - 3 Commuter Rail Improvement Project – Gainesville to Haymarket

In 1992, VRE began service on CSX tracks between Fredericksburg and Washington, DC In order to implement commuter rail service, VRE and the Commonwealth committed to constructing improvements at no cost to CSX. Through the Third Track Improvements, VRE and the Commonwealth have worked to fund and construct rail capacity improvements. In 2006, DRPT released the *Washington, DC to Richmond Third Track Feasibility Study* which identified a cost of over $307 million (2006$) to build a third track between Fredericksburg and Washington, D.C, based on minimal engineering.

This project includes the third track construction of Arkendale to Powell's Creek, but does not include a new Rappahannock River bridge at Fredericksburg or a new Potomac River bridge in Washington, DC. Project partners continue to work through the challenge of implementing the Third Track Improvements. CSX, VRE, Amtrak and DRPT have together identified multiple individual projects in this corridor that will expand passenger rail service and improve existing service through signalization, station and rail infrastructure improvements.

Figure 11 – 4 is the location map for the Fredericksburg to Washington portion of the project.

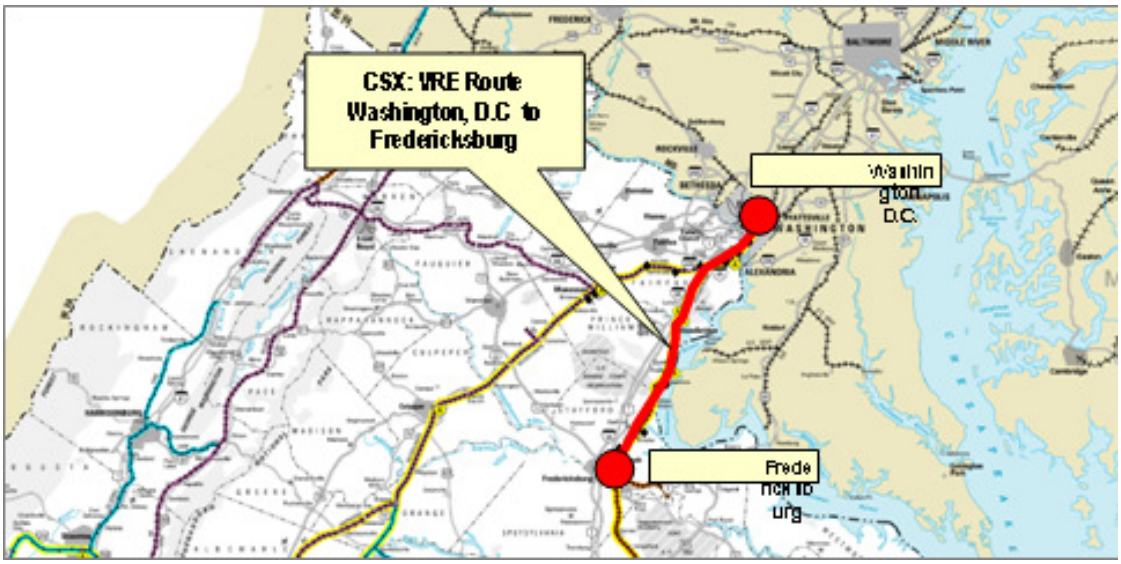


Figure 11 - 4 Commuter Rail Improvement Project – Fredericksburg to Washington

11.3.2.1. Key Facts

- Population growth and commuter patterns have expanded westward along the I-66 corridor and the I-95 corridor continues to grow in population and employment.
- This project will provide congestion relief and new transportation choices in both the I-95 and I-66 corridors.
- Previous investments include Rail Enhancement funding in FY2005 to conduct preliminary engineering and design for a new third main track and station at Cherry Hill in the I-95 corridor and a major investment study to determine the viability of extending service from Manassas to Gainesville/Haymarket in the I-66 corridor.
- VRE provides the equivalent capacity of one highway lane during peak travel periods.
- In 2008, VRE set numerous ridership records as the demand for commuter rail continues to grow.
- Improvements in the Virginia Railway Express service area will:
  - Increase the on-time performance of passenger trains and upgrade the signal system.
  - Expand service and passenger stations between Manassas and Gainesville/Haymarket.
  - Construct a new station at Cherry Hill in the I-95 corridor.
  - Provide an automatic train control system to reduce potential accidents through advance warning and collision avoidance technology.
  - Add new platforms at several existing stations to increase customer access.

- Encourage transit-oriented development.

11.3.2.2. Project Management

- The Commonwealth, Amtrak, CSX, Norfolk Southern and VRE will coordinate all project-related rail improvements and operations.
- The project will be managed through a public-private partnership between the Commonwealth, CSX, Norfolk Southern, VRE and federal partners.

11.3.2.3. Project Phasing

- Phase I - Capacity/Stations (I-95/I-66)
  - $18.2 M ($18.8 M YOE) total project cost ($12.3 M state)
  - Automatic train control and cab signals from Arlington to Washington, DC to improve safety.
  - Final design of the Cherry Hill Third Track in Prince William County.
  - Preliminary engineering for the service expansion from Manassas to Gainesville/Haymarket.
  - Track and bridge upgrades between Alexandria and Manassas.
- Phase II - Capacity/Stations (I-95/I-66 Part 2)
  - $197 M ($221.3 M YOE) total project cost (unfunded)
  - Final engineering and construction of the Cherry Hill Third Track in Prince William County.
  - Station capacity and additional platform improvements.
- Phase III - Capacity/Stations (I-66 Part 3)*
  - $88.2 M ($100.5 M YOE) total project cost (unfunded)
  - Construction of tracks and stations for an average of four daily trains serving Gainesville/Haymarket. Only track construction, not stations, is included.

11.3.2.4. Project Cost:

Total project cost- $303.4 million ($2010)

- Proposed FY2009 – FY2015 Improvement Plan – $18.2 M total project cost for Phase I to be completed from FY09-FY15 ($12.3 M state).
- Stations for Phases II and III are unfunded needs identified in the Statewide Rail Resource Allocation Plan, which are proposed for funding in future years.
- Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental sources.

- Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners. All capital costs are based on the most recently available estimates, expressed in 2010 dollars.

- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

**All marked items require operating funds in addition to the capital costs noted in this document*

11.3.2.5. Total VRE Annual Benefits for all projects

- Removes over .6 million cars from the I-95 corridor
- Saves over 2.1 million gallons of fuel
- Saves 9.7 thousand tons CO_2 emission

11.3.2.6. Partnership Opportunities

The Commuter Rail Improvement project will require a public private partnership between the federal government, the Commonwealth, CSX , NS, VRE, and the private sector as it relates to the construction of stations.

11.3.3. Southeast High Speed Rail Project (I-95, I-295, I-85, I-64 and Route 460)

Figure 11 – 5 is the location map for the project.

Figure 11 - 5 Southeast High Speed Rail Project

11.3.3.1. Key Facts

- As population grows in major urban corridors, as highway and airline congestion increase and as energy costs rise, rail ridership is increasing across the U.S., creating demand for higher speed rail services.
- The I-95 corridor has been identified as a priority corridor for high speed rail in the U.S.
- The Southeast High Speed Rail corridor will extend high speed rail service south from Washington, DC to Richmond and on to Raleigh and Charlotte, NC. It will also expand east from Richmond to Hampton Roads.
- Virginia and North Carolina continue to advance high speed rail in the Southeast High Speed Rail corridor. In October 2002, the Tier I Environmental Impact Statement (EIS) was completed from Washington, DC to Charlotte, NC. In December 2005 Virginia and North Carolina began the Tier II EIS through the allocation of Virginia Rail Enhancement funds to extend the project work from Raleigh, NC to Richmond. As this project advances through the environmental process, additional work is necessary for the completion of the Tier II EIS for railway and associated highway improvements for the proposed 168-mile corridor between Richmond and Raleigh, NC.
- The Commonwealth's contributions toward the Southeast High Speed Rail Project will:

- Evaluate a high speed rail connection between Hampton Roads and Richmond's Main Street Station.
- Evaluate high speed passenger rail service on the designated high speed rail corridor from Raleigh, NC through Richmond to Washington, DC.
- Provide passengers with a more cost-effective, competitive alternative to air travel.
- Connect Virginia to the Northeast Corridor, the only active high speed rail corridor operating in North America.

11.3.3.2. Project Management

- The Commonwealth, Amtrak, CSX and Norfolk Southern will coordinate all project-related rail improvements and operations.
- The project will be managed through a public-private partnership between the Commonwealth, North Carolina, CSX, Norfolk Southern and federal partners.

11.3.3.3. Project Phasing

- Phase I - Environmental Studies
  - $4 M ($4 M YOE) total project cost ($2.3 M state)
  - Complete the Tier II Environmental Impact Statement (EIS) and seek a federal Record of Decision for railway and associated highway design in the corridor from Richmond Main Street Station to Raleigh, NC.
  - Complete the Richmond/Hampton Roads Tier I Draft EIS.
- Phases II and III - Construction and Improvements
  - $1,713.7 M ($2,076.6 M YOE) total project cost (unfunded)*
  - Engineering, track construction and improvements from Washington, DC to the North Carolina state line for high speed rail service.

11.3.3.4. Project Cost

Total project cost: $1,717.7 million ($2010)

- Proposed FY2009 – FY2015 Improvement Plan – $4 M total project cost for completion of Phase I from FY09-FY15 ($2.3 M state).
- Phases II and III are unfunded needs identified in the Statewide Rail Resource Allocation Plan, which are proposed for funding in future years.
- Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources.
- Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners. All capital costs are based on the most recently available estimates, expressed in 2010 dollars.

- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

- Not included in this project cost is the funding necessary for the Richmond to Hampton Roads passenger rail service. These costs will be completed in the Richmond to Hampton Roads Tier I EIS.

  **All marked items require operating funds in addition to the capital costs noted in this document.*

11.3.3.5. Annual Benefits

- Removes over 1.1 million cars from Virginia and North Carolina highways
- Saves over 5.6 million gallons of fuel
- Saves 34 thousand tons CO2 emissions

11.3.3.6. Partnership Opportunities

The Southeast High-Speed Rail project will require a public private partnership between the Commonwealth, North Carolina, Amtrak, CSX, Norfolk Southern and Federal partners.

11.3.4. I-81/Route 29 Intercity Passenger Rail Project

The proposed I-81/Route 29 Intercity Passenger Rail Project will help manage highway congestion and improve mobility along the Route 29, I-81 and Route 460 corridors. The project consists of improved travel times, more frequent service to Lynchburg and Charlottesville and expanded service to Roanoke, Bristol and Richmond. The Norfolk Southern, the Commonwealth, Amtrak and VRE will need to coordinate improvements and operations in the corridor given that VRE long range plans may also include service extensions along this corridor.

Figure 11-6 illustrates the proposed routing for the I-81/Route 29 Intercity Passenger Rail Project.

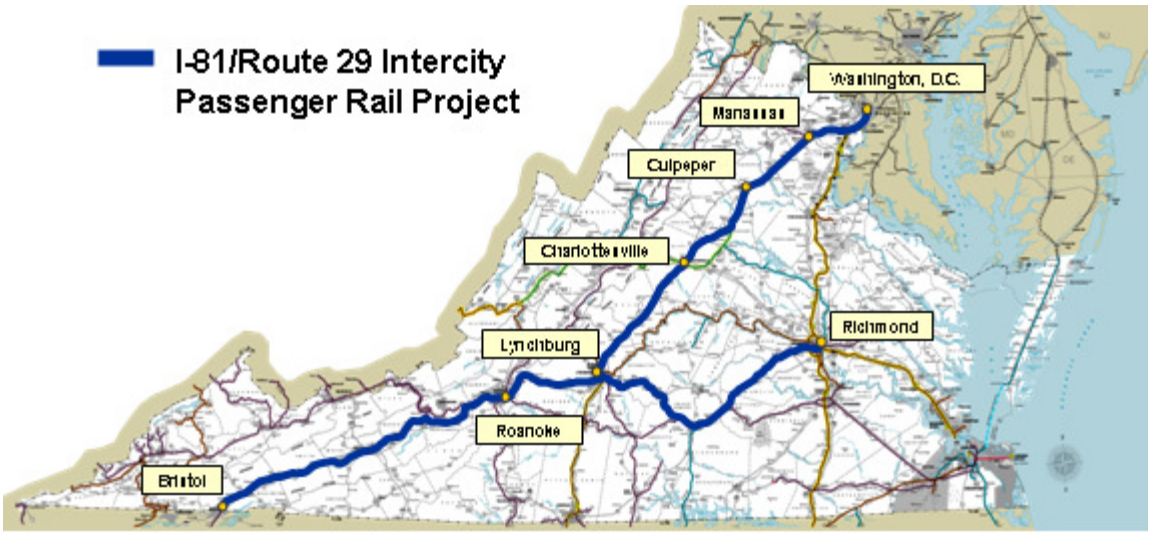


Figure 11 - 6 I-81/Route 29 Intercity Passenger Rail Project

11.3.4.1. Key Facts

- This project provides incremental service improvements to enhance passenger rail service in Central and Southwestern Virginia.
- Annual Amtrak ridership in this corridor totaled 50,554 in 2007. With this new regional service, annual ridership could increase by between 185,400 and 243,500 annual passengers by 2030.
- To enhance passenger rail service along the Route 29, Interstate 81 and Route 460 corridors, the I-81/Route 29 Intercity Passenger Rail Project will:
  - Add new passenger rail service to Lynchburg, Roanoke and Bristol with connections to Richmond and Washington, DC.
  - Construct new stations to support the new service.
  - Increase capacity through new passing tracks.
  - Reduce travel time by improving rail infrastructure for higher speeds.

11.3.4.2. Project Management

- The project will be managed through a public-private partnership between the Commonwealth, Norfolk Southern, Amtrak and federal partners.
- The Commonwealth, Amtrak, Norfolk Southern and VRE will need to coordinate improvements and operations in the corridor.

11.3.4.3. Project Phasing

- Phase I - Washington, DC/Lynchburg
  - $40.7 M ($41.3 M YOE) total project cost ($30.6 M state share)*

- Add one daily train between Washington, DC and Lynchburg Kemper Street Station as a demonstration project for three years beginning in 2009.
- Increase commuter capacity in the VRE service area.
- Complete the capacity study for the entire project corridor from Washington, DC to Bristol and Lynchburg.
- Increase capacity for a second train to Lynchburg with construction of second main line track between Nokesville and Calverton.

- Phase II - Capacity/Stations Roanoke
  - $105.9 M ($117.2 MYOE) total project cost (unfunded)*
  - Add one additional train to extend service to Roanoke.
  - Increase capacity and service reliability from Lynchburg to Roanoke.
  - Improve the Roanoke Train Station and train storage facility.
- Phases III and IV - Capacity/Stations Bristol/Richmond
  - $64 M ($115.6 M YOE) total project cost ($45.5 M state)*
  - Add one train to Bristol from Roanoke, including one train set and capacity improvements.
  - Provide train service from Bristol to Richmond and from Bristol to Washington, DC.

11.3.4.4. Project Cost

Total project cost: $210.6 million ($2010)

- Proposed FY2009 – FY2015 Improvement Plan– $40.7 M total project cost for completion of Phase I from FY10-FY15 ($30.6 M state).
- Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- Phases II, III and IV represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.
- All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

*All marked items require operating funds in addition to the capital costs noted in this document.

11.3.4.5. Annual Benefits

- Removes 203 thousand cars from I-81 & Rte 29 corridors
- Saves 2 million gallons of fuel
- Saves 15 thousand tons CO2 emissions

11.3.4.6. Partnership Opportunities

The I-81/Route 29 Intercity Passenger Rail Project will require a public private partnership between the Commonwealth, Norfolk Southern, Amtrak and federal partners, given that this project is located within the area of freight rail projects identified by Norfolk Southern for the Heartland, Crescent and Coal corridors.

11.4. Class I Railroad Improvements

The projects presented in this section total $1.8 billion for both Class I and shortline railroads (Figure 11-7).

Class I and Shortline Railroad Project Costs	
Project	Costs
NS	$ 1,700 million
CSX	$ 48.0 million
Total Costs	**$ 1.748 million**

Figure 11 - 7 Summary of Class 1 Project Costs

11.4.1. National Gateway Project

The National Gateway project is designed to improve the efficiency of freight rail shipping for the Mid-Atlantic ports of Baltimore, MD, Virginia, and Wilmington, NC and the markets in Pennsylvania, West Virginia, Ohio and other Midwestern states. The project extends through six states and the District of Columbia and consists of approximately $700 million in projects to expand capacity and provide clearance for double-stack intermodal trains, improving the flow of international and domestic freight between these regions. Included in the National Gateway are the expansion of several existing intermodal facilities and construction of new facilities to manage current and projected demand for freight movement along the corridor. At CSX's request, a cost benefit analysis for the project and estimates that the diversion of truck traffic to rail will range from 186,000 (moderate scenario) to 375,000 truckload equivalents (aggressive scenario) on an annual basis if the improvements are implemented.

Figure 11 – 7 depicts the project.

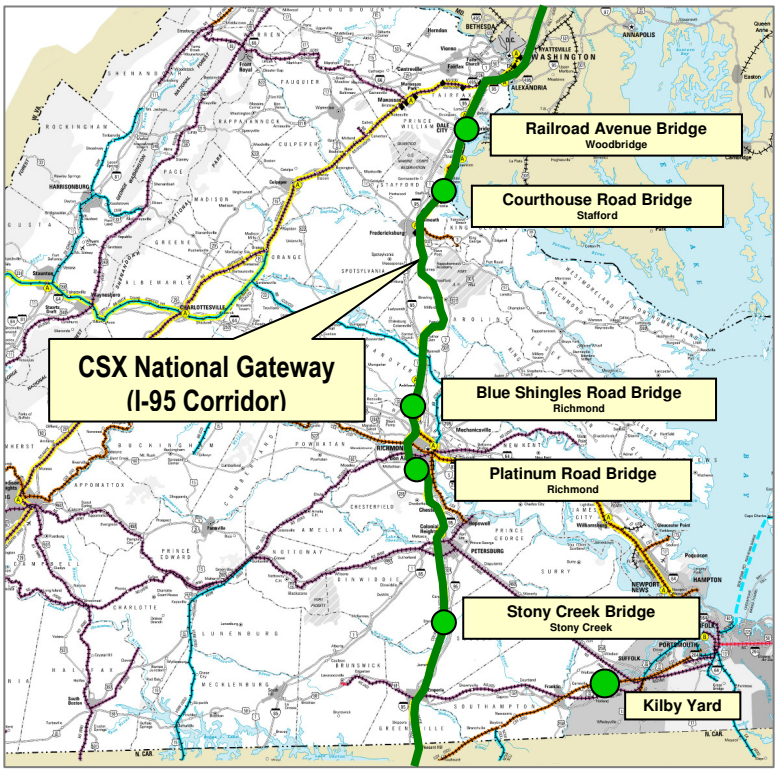


Figure 11 - 8 National Gateway Project

11.4.1.1. Key Facts

- The multi-state National Gateway Project extends from North Carolina to Ohio and parallels I-95 through Virginia, with a connection to the Port of Virginia.
- The diversion of freight from highway to rail will benefit from a multi-state initiative involving federal, state, local and private partners.
- The project plan focuses on improving clearances to enable double stack intermodal train operations.
- To improve the efficiency of freight rail shipping for the mid-Atlantic ports of Baltimore, MD, Virginia and Wilmington, NC and markets in Pennsylvania, West Virginia, Ohio and other Midwestern states, the National Gateway Project will:
  - Divert freight traffic from highway to rail and double the capacity for freight shipments in the I-95 corridor by providing double-stack clearances for freight containers.
  - Increase capacity and service reliability through Washington, DC to allow more trains to operate in this heavily congested part of the corridor.
  - Support the enhancement of VRE and Amtrak service in the I-95 corridor.

- Add a new freight yard to support increased container traffic originating at Virginia's Ports.

11.4.1.2. Project Management

- The Commonwealth, CSX and VRE will coordinate all project-related rail improvements and operations.
- The project will be managed through a public-private partnership between the Commonwealth, CSX, federal partners and other states.

11.4.1.3. Project Phasing

- Phase I - Capacity Improvements
  - $135.7 M ($149.1 M YOE) total project cost ($25 M state)
  - Adds corridor double stack clearance capacity by removing or modifying five bridges that obstruct the vertical clearance needed for double stack rail operations on the I-95 Corridor between the North Carolina state line and Washington, DC.
  - Environmental studies and preliminary engineering for two new highway grade-separated bridges.
  - Engineering, design and construction of the new double stack Virginia Avenue Tunnel.
- Phase II - Clearance Completion
  - $5.9 M ($6.8 M YOE) total project cost (unfunded)
  - Completes Virginia Avenue Tunnel double stack clearance and bridge clearance work.
- Phase III - Freight Yard Capacity
  - $46.4 M ($47.0 M YOE) total project cost (unfunded)
  - Additional yard capacity at Kilby Yard in Suffolk to enhance container shipping service.
  - Federal and multiple state partnerships are required to reach project objectives.

11.4.1.4. Project Cost

Total project cost: $188 million ($2010 dollars)

- Proposed FY2009 – FY2015 Improvement Plan – $135.7 M total project cost for Phase I completion from FY10-FY15 ($25 M state).
- Phases II and III represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.

- Assuming no availability of federal funds other than those assumed by CSX, the total project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.

- All capital costs are based on the most recently available estimates, expressed in 2010 dollars.

- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

11.4.1.5. Annual Benefits for Virginia

- Removes 260,000 trucks from I-95 corridor
- Saves 32 million gallons of fuel
- Saves 62 thousand tons of CO_2 emissions

11.4.1.6. Partnership Opportunities

The National Gateway project will require a federal, multi-state and private partnership given the project's potential benefits of supporting increased passenger and freight rail operations along the I-95 Corridor. The public benefit analysis included all of CSX's proposed projects for the multi-state initiative, including the cost of the Virginia Avenue Tunnel. In order to advance the project in Virginia, the Commonwealth and CSX will have to reach an agreement on project scope, costs and allocation of costs between partners.

11.4.2. Crescent Corridor Project (I-81, I-20, I-40, I-75 and I-85)

The multi-state Crescent Corridor extends from New Orleans, LA to the Port of New York/New Jersey. The Virginia portion is depicted in Figure 11-4. The Crescent Corridor project is designed to improve the efficiency of freight rail shipping along the following significant and congested highways: I-20, I-40, I-75, I-85 and I-81.

The Norfolk Southern Crescent Corridor in Virginia extends along I-81 from the West Virginia border in the north to the Tennessee border in the south, from Washington, DC to Front Royal along the I-66 Corridor and from Manassas to Danville along the Route 29 Corridor. Norfolk Southern's intermodal trains on the Route 29 Corridor travel primarily north and south from Atlanta, GA and Charlotte, NC to Harrisburg, PA. Intermodal trains following the I-81 corridor travel primarily north and south from the Gulf coast and the Knoxville, TN and Birmingham, AL areas. Norfolk Southern also connects with major intermodal carriers at Memphis, TN and Shreveport, LA via the Kansas City Southern Railway. The success of truck diversion on the Crescent Corridor depends on a multi-state initiative involving an array of federal, state, local and private partners.

The corridor has two distinct rail lines in Virginia that parallel I-81. They will be improved to increase rail capacity. This additional capacity will enhance rail operations so that more trucks can be diverted from the heavily traveled I-81 corridor. About a third of I-81 Crescent Corridor traffic flows between terminals in Tennessee and the Northeast. These trains will utilize the Shenandoah Route, which will require additional capacity in FY2009 and future years.

Figure 11 – 9 depicts the project.

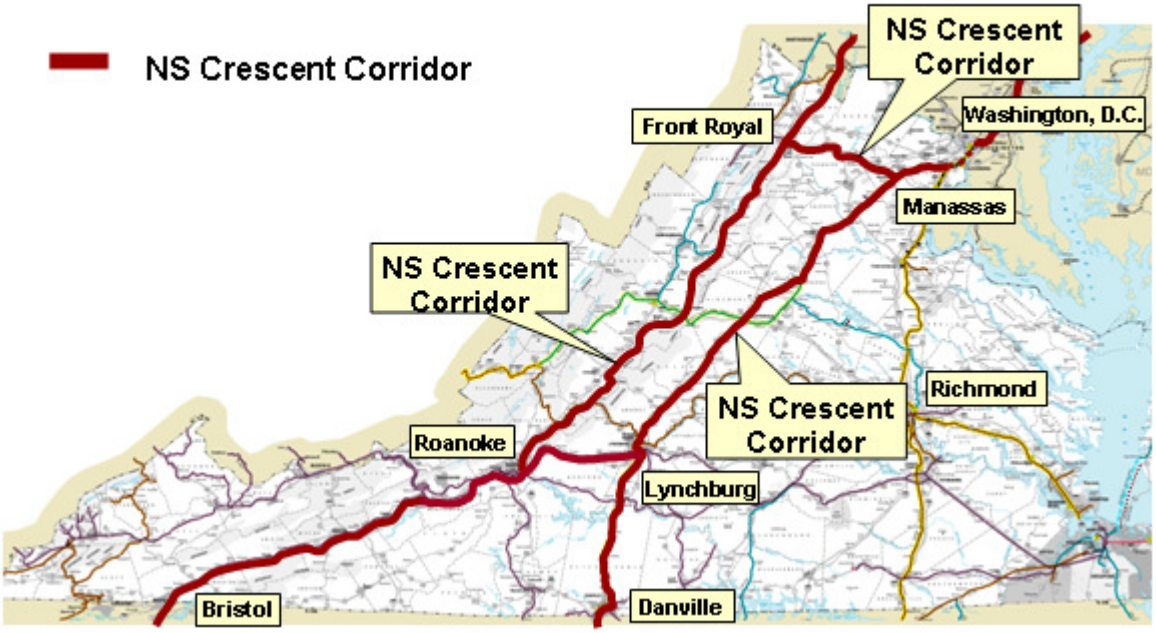


Figure 11 - 9 Crescent Corridor

11.4.2.1. Key Facts

- The multi-state Crescent Corridor extends from New Orleans/Memphis to New Jersey.
- The success of truck diversion on the Crescent Corridor depends on public private partnerships with multiple states and will involve federal, state, local and private parties.
- In Virginia, the corridor has two distinct rail lines paralleling I-81 that will be used together to increase rail capacity.
- To improve the efficiency of freight rail shipping and provide highway congestion relief in Virginia, the Crescent Corridor Project will:
  - Divert freight shipments from highway to rail along I-20, I-40, I-75, I-85, I-81 and Route 29.
  - Expand rail capacity.
  - Facilitate the expansion of Amtrak service to Charlottesville, Lynchburg, Roanoke and Bristol.
  - Support the enhancement of VRE service from Manassas to Gainesville/Haymarket.

11.4.2.2. Project Management

- The Commonwealth, Norfolk Southern and the I-81 corridor states will need to coordinate resources to fully develop this project. A multi-state agreement and a federal funding partner are essential to advance this initiative.

- The project will be managed through a public-private partnership between the Commonwealth, Norfolk Southern, federal partners and other states.

11.4.2.3. Project Phasing

- Phase I - Priority Capacity Improvements
  - $38 M ($38 M YOE) total project cost ($26.6 M state)
  - Preliminary engineering and construction of the top four priority capacity projects located near Berryville, Elkton, Bentonville and Stanley.
  - Completion of Manassas to Front Royal capacity improvements.
- Phase II - Secondary Capacity Improvements
  - $82.2 M ($82.7 M YOE) total project cost (unfunded)
  - Additional capacity and reliability improvements on the Shenandoah, Piedmont, Manassas, Heartland and Bristol lines.
- Phase III - Remaining Capacity Improvements
  - $394 M ($418.7 M YOE) total project cost (unfunded)
  - Remaining capacity, train reliability, and speed improvements on the Shenandoah, Piedmont, Manassas, Heartland and Bristol lines.

11.4.2.4. Project Cost

Total project cost: $514.2 million ($2010)

- Proposed FY2009 – FY2015 Improvement Plan– $38 M total project cost to complete Phase I from FY10-FY15 ($26.6 M state).
- Phases II and III represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.
- Assuming no availability of federal funds, the project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

11.4.2.5. Annual Benefits for Crescent Corridor in Virginia (Phases I and II)

- Removes 592 thousand trucks from the I-81 corridor by 2035

- Saves over 94 million gallons of fuel
- Saves 210 thousand tons of CO_2 emissions

11.4.2.6. Partnership Opportunities

The Crescent Corridor project will represent an opportunity for a federal, multi-state and private partnership, given the project's potential benefits of supporting increased passenger and freight operations along the I-81 corridor and other major corridors outside of Virginia. The public benefits of this project are being further defined in the I-81 Freight Rail Study analysis, to be completed in Spring 2009. The proposed projects in Virginia result in truck diversion benefits from the implementation of a multi-state freight rail initiative. The Commonwealth and Norfolk Southern will have to reach an agreement on project scope, costs and the allocation of costs between partners that will support improvements for both passenger and freight rail.

11.4.3. Heartland Corridor Project

The Heartland Corridor will double freight rail capacity along the line that parallels Route 460 through Virginia and significantly improve the freight shipping time to markets in the Midwest. The project includes raising tunnel clearances and the development of intermodal facilities in the Roanoke region, Prichard, WV and Rickenbacker, OH. The project will increase capacity and save 1.5 days over the current shipping time between Hampton Roads and Chicago, IL. The Heartland Corridor in Virginia is comprised of the Norfolk Southern mainlines from the Port of Hampton Roads across the southern half of the state through Petersburg and Roanoke and on to Bluefield, roughly paralleling Route 460. Coal, intermodal and merchandise trains use the Route 460 Corridor. In addition, Norfolk Southern, DRPT and Amtrak are exploring the possibility of new passenger rail service between Alexandria and Bristol that will use part of this corridor from Lynchburg to Walton, near Blacksburg.

To date, the Commonwealth has committed $22.35 million towards the Virginia projects. Work is underway to raise the height of four tunnels in Virginia to support double-stack operations. The location of an intermodal facility in the Roanoke Region is being discussed and the scope of the project may potentially be expanded to support improved access to the facility if this element of the project advances. The advancement of the intermodal facility will require an additional $6.3 million for access improvements.

As an addition to the initial Heartland Corridor project, Norfolk Southern has begun to identify Phase 2 projects, including the development of a parallel double-stack route from Altavista to Roanoke, clearance of the Montgomery Tunnel mainline, track capacity improvements near Farmville and the City of Suffolk and the development of an intermodal facility in Prince George County. These proposed Phase 2 projects total $59.71 million. DRPT will continue to work with Norfolk Southern to evaluate these proposed projects for potential future funding.

Figure 11 – 10 depicts the project.

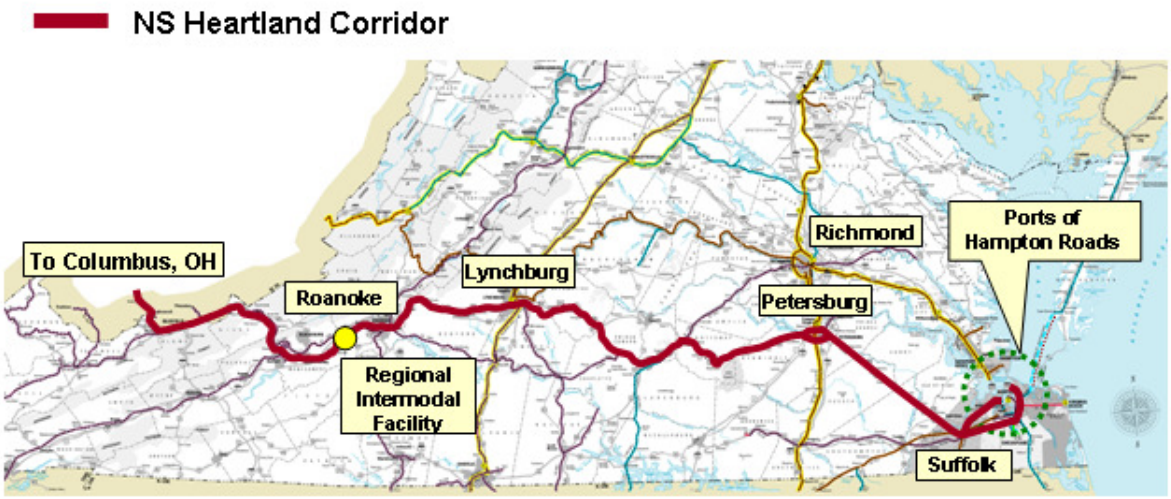


Figure 11 - 10 Heartland Corridor

11.4.3.1. Key Facts

- The Heartland Corridor will double the intermodal rail capacity along Route 460 and significantly improve freight shipping between markets in the Midwest.
- This initiative has been identified as a project of national significance.
- Norfolk Southern, DRPT and Amtrak are exploring the possibility of new passenger service between Bristol, Lynchburg and Washington, DC along part of this corridor.
- To improve freight service between the Ports of Virginia and markets in the Midwest along the Route 460 and I-81 corridors, the Heartland Corridor project will:
  - Complete highway access improvements needed for the Roanoke Region Intermodal Facility, a regional initiative to generate up to 2,900 jobs and up to $71 million in tax revenues annually.
  - Increase tunnel clearances to provide redundant routes on sections of the corridor that host freight and passenger operations.

11.4.3.2. Project Management

- The project will be managed through a public-private partnership between the Commonwealth, Norfolk Southern, federal partners and other states.

11.4.3.3. Project Phasing

- Phase I - Access Improvements
  - $18.1M ($18.1 M YOE) total project cost ($12.7 M state)
  - Relocation of Cove Hollow Road to improve access to the facility.
  - Completes intermodal facility funding based on final selected site costs.
- Phase II - Clearance Improvements

- $9.6 M ($10.4 M YOE) total project cost (unfunded)

- Added corridor double stack capacity through improving the clearance of second main line Montgomery Tunnel.

11.4.3.4. Project Cost

Total project cost: $27.7 million ($2010)

- Proposed FY2009 – FY2015 Improvement Plan– $18.1 million total project cost to complete Phase I from FY10-FY15 ($12.7M state).

- Phase II represents unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.

- Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.

- All capital costs are based on the most recently available estimates, expressed in 2010 dollars.

- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

11.4.3.5. Phase Project Annual Benefits (Phases I and II)

- Removes 150 thousand trucks from Virginia highways
- Saves 20 million gallons of fuel
- Saves 32 thousand tons of CO_2 emissions

11.4.3.6. Partnership Opportunities

A public private partnership has been executed to support Phase 1 of the project, which was designated as a project of national significance. Additional projects under Phase 2 are under review. The Commonwealth and Norfolk Southern will have to reach an agreement on project scope, costs and the allocation of costs between partners that will support improvements for both passenger and freight rail.

11.5. Shortline Railroads

The Shortline Railroad needs and program development are discussed in greater detail in Chapter 12 of the VSRP.

11.5.1. Shortline Railroad Preservation (Statewide)

11.5.1.1. Key Facts

- The Commonwealth has determined that it is in the public interest for shortline railways to be preserved due to the value that they deliver for Virginia businesses and for passenger rail service.

- Shortline railroads connect commercial and industrial business to Class I railroads and, in the case of the Buckingham Branch Railroad, serve as the host railroad for Amtrak service.
- The Rail Preservation program assists in moving over 609,900 annual railcars and removing over 2.14 million trucks off of Virginia's highways.
- The Shortline Railroad Preservation Program will:
  - Identify and establish a cyclical program to preserve Virginia's shortline rail network to a minimum of the Federal Railroad Administration's Class 2 track standards for freight only shortlines and Class 4 track standards for shortlines hosting passenger trains and some of the freight only shortlines.
  - Work to bring all of Virginia's shortline railroads into conformance with these track standards will cost approximately $252 million over the next 30 years. Shortline railroad also have specific project needs that have been identified, totaling $193 million. Figure 4-6 illustrates both the program and project needs for each shortline railroad. It should be noted that there may be other needs associated with bridges that have not yet been fully evaluated.

11.5.1.2. Project Cost

- The cyclical program for routine items is centered on a 6 year cycle of tie replacement, track surfacing and lining, selective rail replacement, and drainage work that would bring the railroads to a desired condition in 30 years. Each 6 year cycle is anticipated to cost $41.85 million, with a total 30 year cycle cost of $209.25 million.
- While the cyclical program addresses the programmatic needs there are discrete project needs that will be required to be met to have the railroads at the desired conditions. The project needs are anticipated to cost $49.4 million over the next 6 years. The project needs will continue at approximately the same level out to the 30 year planning horizon resulting in a 30 year total cost of $250 million.
- The total shortline railroad cost for the programmatic and project needs are $460 million over the next 30 years.

11.5.1.3. Annual Benefits

- There is no statutory requirement for performance benefits within the Rail Preservation Program.
- The Rail Preservation program assists in moving over 609,900 annual railcars and removing over 2.14 million trucks off of Virginia's highways.

Partnership Opportunities
Improvements to the shortline railroad system will require a public private partnership between the Commonwealth and the shortline operators. The shortline railroads are required to achieve specific performance goals for truckload equivalents hauled, maintain rail improvements supported by the Commonwealth and provide a minimum match of 30 percent of the total project cost.

11.6. Port Improvements

The rail improvement projects presented in this section total $178.9 million (Figure 11-12). Improving rail capacity at the Ports of Hampton Roads supports increased truck to rail diversion and provides economic benefit to the Commonwealth by reducing transportation costs for both domestic and international trade.

Ports of Hampton Roads Project Costs	
Project	Costs
NIT Central Rail Yard Expansion	$ 40.15 million
Craney Island Rail connections	$ 130.0 million
Norfolk & Portsmouth Beltline Railroad	$ 8.75 million
Total Costs	**$ 178.9 million**

Figure 11 - 11 Summary of Ports of Hampton Roads Project Costs

11.6.1. Port-Related Rail Improvement Project

Figures 11 – 12 through 11 – 14 depict the projects that make up the overall project.

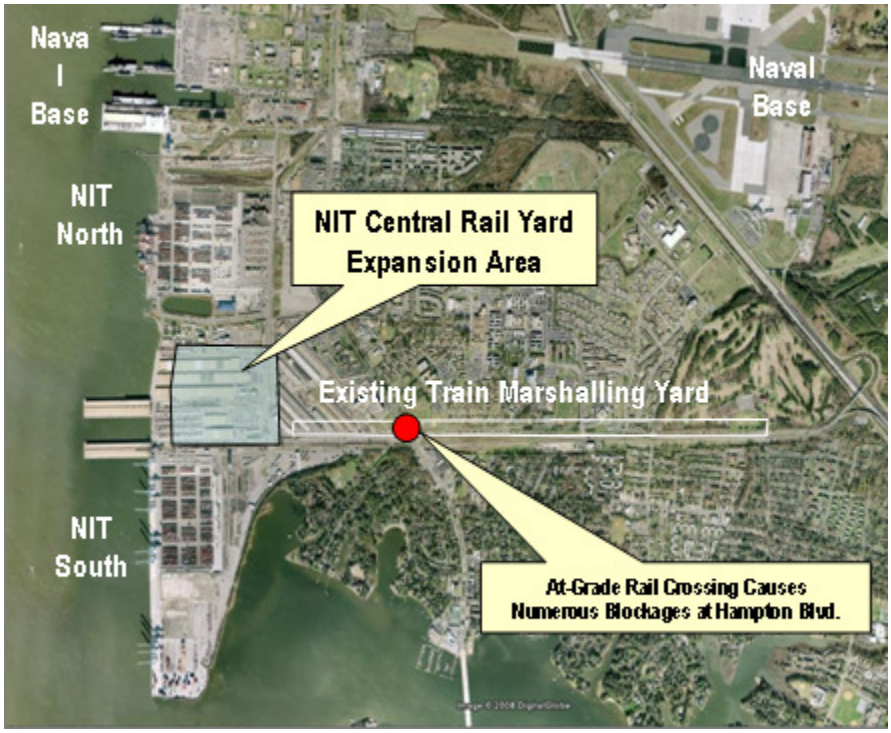


Figure 11 - 12 Norfolk International Terminal On-dock (Central) Railyard

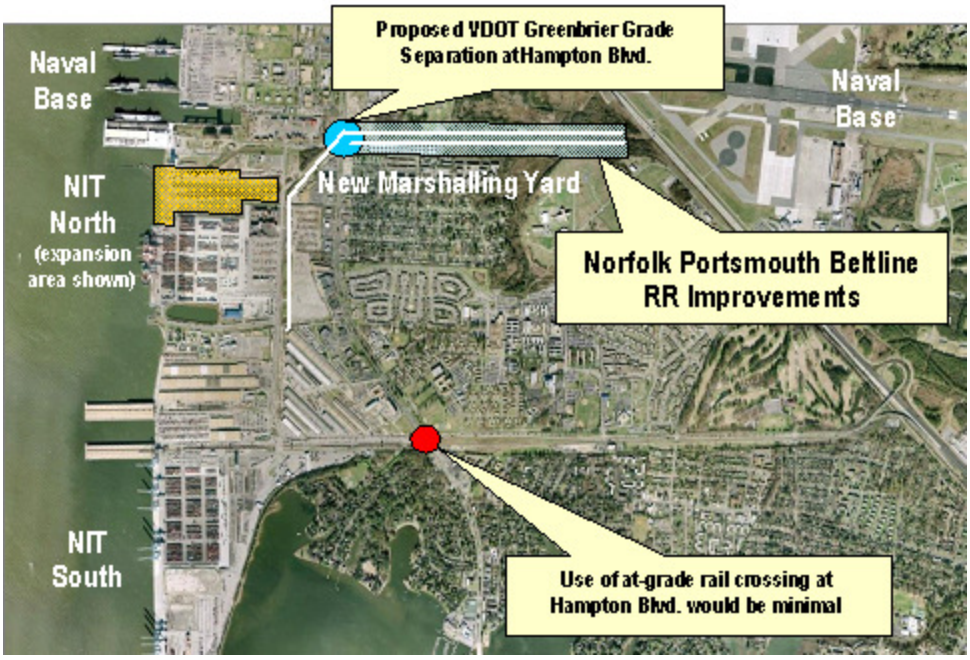


Figure 11 - 13 Norfolk and Portsmouth Belt Line rail yard

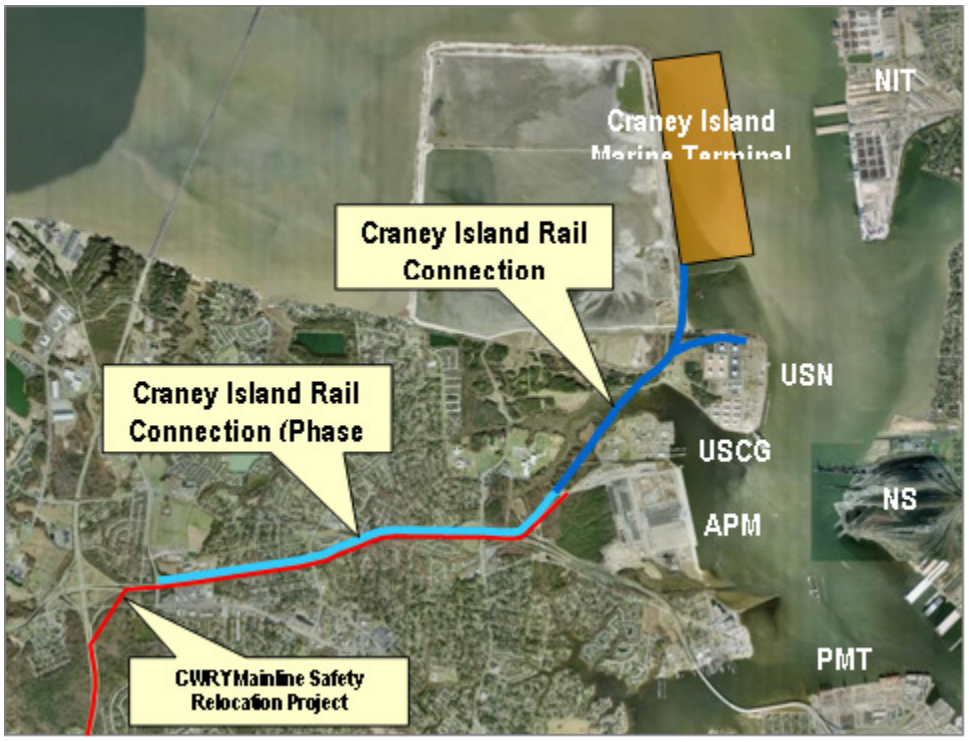


Figure 11 - 14 Craney Island

11.6.1.1. Key Facts

- The project will double the on-dock rail capacity at Norfolk International Terminals with an on-dock rail yard.
- Additional yard capacity improvements will enhance highway grade crossing safety and reduce highway delays at grade crossings.
- The proposed Craney Island marine terminal will transport 50 percent of the projected 1.43 million rail container activity associated with this project.
- To improve rail capacity at the Ports of Hampton Roads, support increased freight truck to rail diversion and provide economic benefits to the Commonwealth by reducing transportation costs for both domestic and international trade, the Port-Related Rail Improvement Project will:
  - Provide competitive rail access to Virginia's ports to ensure that shippers and consumers benefit from cost-effective transportation choices.
  - Relocate rail lines serving the ports to enhance safety.
  - Increase container and train handling capacity to streamline freight handling.
  - Increase rail capacity to allow more containers to be diverted to rail.

11.6.1.2. Project Management

The project will be managed through a public-private partnership between the Commonwealth, the ports and the operating railroads.

11.6.1.3. Project Phasing

- Phase I - Yard Improvement Engineering
  - $2.2 M ($2.2 M YOE) total project cost ($0.8 M state)
  - Preliminary engineering of capacity improvements to the Norfolk International Terminals on-dock rail yard.
  - Preliminary engineering of capacity improvements to the Norfolk and Portsmouth Belt Line rail yard
- Phase II - Yard Improvement Construction
  - $41.7 M ($41.8 M YOE) total project cost (unfunded)
  - Construction of capacity improvements to the Norfolk International Terminals on-dock rail yard.
  - Construction of capacity improvements for the Norfolk and Portsmouth Belt Line yard to relocate train movements to a grade separated crossing.
- Phase III - Craney Island Connector
  - $20.2 M ($20.8 M YOE) total project cost (unfunded)
  - Additional capacity and access improvements for the Craney Island Terminal.

- Construction of a second main line track in the median of Route 164.
- Preliminary engineering and design of the Craney Island Rail Connector track.

11.6.1.4. Project Cost

Total project cost: $64.1 million ($2010)

- Proposed FY2009 – FY 2015 Improvement Plan- $2.2 M total project cost for completion of Phase I from FY10-FY15 ($0.8 M state).
- Phases II and III represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.
- Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

11.6.1.5. Annual Benefits

- Removes 180 thousand trucks from Virginia's highways
- Saves over 24 million gallons of fuel
- Saves 47 thousand tons of CO2 emissions

11.6.1.6. Partnership Opportunities

The NIT Central Rail Yard Expansion project will require a public private partnership between the Commonwealth and Virginia International Terminals, a non-profit terminal operating company that is a subsidiary of the Virginia Port Authority (VPA). Any agreement executed with VPA will incorporate container growth and performance requirements over time.